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The opinion in support of the decision being entered today  
(1) was not written for publication in a law journal and  
(2) is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* GERALD F. ZIOLO  
and KATHLEEN M. BRAUNGART

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Appeal No. 1996-3980  
Application 08/290,125<sup>1</sup>

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ON BRIEF

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Before KIMLIN, JOHN D. SMITH and WARREN, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal*

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 1 through 9, 11, 20 through 22 and 24 through 27. Claims 10, 12 through 19, 23 and 28 are also of record and have been withdrawn from consideration by the examiner under 37 CFR § 1.142(b) (1959). Claim 1 is illustrative of the claims on appeal:

1. A magnetic nanocomposite composition comprising from about 0.001 to about 60 weight percent of nanocrystalline particles of Fe<sub>3</sub>O<sub>4</sub>, and from about 40 to about 99.999 weight percent of a

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<sup>1</sup> Application for patent filed August 15, 1994.

resin, wherein the nanocrystalline particles of  $\text{Fe}_3\text{O}_4$  are bonded to the resin and uniformly dispersed therein.

The appealed claims as represented by claim 1<sup>2</sup> are drawn to a magnetic nanocomposite composition comprising at least the specified weight percentage of nanocrystalline particles of  $\text{Fe}_3\text{O}_4$  which are uniformly dispersed in and bonded to the specified weight percentage of a resin. According to appellants, the claimed magnetic nanocomposite compositions can be used, *inter alia*, in the preparation of dry and liquid magnetic developer formulations (specification, e.g., pages 5-6).

The references relied on by the examiner are:

Chang et al. (Chang)	4,873,102	Oct. 10, 1989
Maruno et al. (Maruno)	5,204,457	Apr. 20, 1993
Ziolo (Ziolo '756)	5,322,756	Jun. 21, 1994

Appellants have relied on the following reference in their brief:

Ziolo (Ziolo '866)	4,474,866	Oct. 2, 1984
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The examiner has advanced the following grounds of rejection on appeal: claims 1 through 9, 11, 20 through 22 and 24 through 27 are rejected under 35 U.S.C. § 112, first paragraph, written description requirement; claim 4 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention; claims 1 through 3 and 5 through 9, 11 and 24 through 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by Maruno; claims 1 through 9, 11 and 24 through 27 are rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Chang; and claims 1 through 9, 11 and 24 through 27 are rejected under 35 U.S.C. § 103 as being unpatentable over Chang in view of Ziolo '756.<sup>3</sup>

We affirm the ground of rejection under § 112, first paragraph, written description requirement, with respect to claim 4 and the grounds of rejection based on prior art. We reverse the ground of

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<sup>2</sup> Appellants state in their brief (page 4) that appealed claims 1 through 9, 11 and 24 through 27 constitute a single group of claims. Thus, with respect to these appealed claims, we decide this appeal based on appealed claim 1. 37 CFR § 1.192(c)(7) (1995).

<sup>3</sup> The examiner has withdrawn the grounds of rejection under § 102(b) based on "JP 0.015,439" and under § 103 based on Uneybayashi in view of "JP 0.015,439." See answer, page 9, and the advisory action of December 1, 1995 (Paper No. 10; page 4).

rejection under § 112, first paragraph, written description requirement, with respect to claims 1 through 3 and 5 through 9, 11, 20 through 22 and 24 through 27 and the ground of rejection of claim 4 under § 112, second paragraph.

Rather than reiterate the respective positions advanced by the examiner and appellants, we refer to the examiner's answer and to appellants' brief for a complete exposition thereof.

### *Opinion*

The ground of rejection of claims 1 through 9, 11, 20 through 22 and 24 through 27 under § 112, first paragraph, was described by the examiner as a "new matter rejection" (answer, page 3), and thus we have considered it as involving the written description requirement of this statutory section. *See generally, Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1560, 19 USPQ2d 1111, 1114 (Fed. Cir. 1991); *In re Wertheim*, 541 F.2d 257, 265, 191 USPQ 90, 99 (CCPA 1976). With respect to § 112, first paragraph, written description requirement, the examiner must establish that, as a factual matter, the claimed invention was *prima facie* not adequately described to one of ordinary skill in this art by the disclosure in the specification at the time the application was filed. *See generally, In re Alton*, 76 F.3d 1168, 1175, 37 USPQ2d 1578, 1583-84 (Fed. Cir. 1996). In the present case, we find that the examiner has established a *prima facie* case that the claimed invention encompassed by claim 4 was not described to one of ordinary skill in this art by the disclosure at the time the application was filed. The examiner points out that the phrase "polycarboxylic salts  $R-COO^- ? Na^+$  prepared from monomers of the formula  $R-COO^- ? Na^+$ , where R is a polymerizable monomer selected from the group consisting of an alkylene group or arylalkylene group" in claim 4, is not based on the original application which contained the following disclosure "polycarboxylic salts  $R-COONa^+$ , wherein R is alkyl or arylalkyl group" at page 7, lines 14-15. We find no basis in the original application for the amendment to page 7, lines 14-15, of the specification<sup>4</sup> reflected in claim 4, including page 13, lines 1-2, of the specification pointed to by appellants in their brief (page 5). Accordingly, we find that, as a matter of fact, appellants have not rebutted the examiner's *prima facie* case with respect to claim 4, and thus affirm this ground of rejection with respect to this claim.

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<sup>4</sup> See the amendment of August 3, 1995 (Paper No. 6).

However, we cannot agree with the examiner that this ground of rejection extends to claims 1 through 3 and 5 through 9, 11, 20 through 22 and 24 through 27 by virtue of the recitation of “a resin” in claims 1 and 20 (answer, page 3). Indeed, the fact that a claimed genus may encompass species not described in the original application does not established that, *prima facie*, the claimed genus invention was not described to one of ordinary skill in this art by the original application at the time it was filed. *Compare In re Smith*, 458 F.2d 1389, 1394, 1395, 173 USPQ 679, 683 (CCPA 1972). Accordingly, we reverse the ground of rejection under § 112, first paragraph, written description requirement, with respect to claims 1 through 3 and 5 through 9, 11, 20 through 22 and 24 through 27.

We further fail to find that the Markush format employed in claim 4 renders that claim indefinite because the recitation at line 7 of claim 4, pointed to by the examiner, is plainly a Markush group defining a member of the broader Markush group encompass by the claim. Thus, the comma desired by the examiner would render the claim indefinite. Accordingly, we reverse the ground of rejection of claim 4 under § 112, second paragraph.

We begin our consideration of the issues involved with the grounds of rejection based on prior art in this appeal by determining the scope of the magnetic nanocomposite compositions encompassed by appealed claim 1, mindful that the terms of this claim must be given the broadest reasonable interpretation consistent with appellants’ specification as it would be interpreted by one of ordinary skill in this art. *In re Morris*, 127 F.3d 1048, 1053-56, 44 USPQ2d 1023, 1027-30 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). It is clear from the use of the transitional term “comprising” that the magnetic nanocomposite composition must contain at least “about 0.001” weight percent of “nanocrystalline particles of  $\text{Fe}_3\text{O}_4$ ” that are “bonded to” and “uniformly dispersed” in at least “about 40” weight percentage of “a resin,” and can include addition ingredients. *See Exxon Chemical Patents Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995) (“The claimed composition is defined as comprising - meaning containing at least - five specific ingredients.”); *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) (“As long as one of the monomers in the reaction is propylene, any other monomer may

be present, because the term ‘comprises’ permits the *inclusion* of other steps, elements, or materials.”). We find that there is no specified limit on the size of the nanocrystalline particles of  $\text{Fe}_3\text{O}_4$  in claim 1 and, on this record, we are not prepared to read the limitation of “a volume average particle size range of from about 1.0 to about 1,000 nanometers” disclosed with respect to this term at page 7 of the specification, into claim 1. Compare the definition of “nanosized” as “any particulate having dimensions of between about 1 and about 100 nanometers” at page 12 of the specification and the limitation in appealed claim 2 that the “nanocrystalline particles of  $\text{Fe}_3\text{O}_4$  particles have a particle size range of from about 10 to about 100 nanometers.” *In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978), citing *In re Prater*, 415 F.2d 1393, 1405, 162 USPQ 541, 551 (CCPA 1969) (“We have consistently held that no ‘applicant should have limitations of the specification read into a claim where no express statement of the limitation is included in the claim.’”).

Furthermore, we find that one of ordinary skill in this art would interpret the term “a resin” in light of the plain language of the claim and of the specification as having the meaning of polymeric materials in which the nanocrystalline particles of  $\text{Fe}_3\text{O}_4$  can be “uniformly dispersed” and “bonded.” With respect to the term “bonded,” we do not find this term to be specifically defined in the specification. There is disclosure in the specification which suggests that the nanocrystalline particles of  $\text{Fe}_3\text{O}_4$  are chemically bound to an “ion exchange resin,” but one of ordinary skill in the art would not find the term “a resin” in claim 1 to be limited to this specific resin, as we discussed above, and we decline to read the term “a resin” in claim 1 as being limited to an ion exchange resin. Compare the limitation in appealed claim 3 that “said resin is an ionic exchange resin.” *Priest*, supra. We note that appellants suggest in argument that the nanocrystalline particles of  $\text{Fe}_3\text{O}_4$  are “in intimate association (chemically or physically)” with ion exchange resin (brief, pages 6 and 9). Accordingly, we interpret the term “bonded” as including either a chemical or physical “bond” between the “nanocrystalline particles of  $\text{Fe}_3\text{O}_4$ ” and “a resin.”

In comparing claim 1 as we have interpreted it above with Maruno, we agree with the examiner’s finding that this reference anticipates claim 1 because, *prima facie*, all of the elements of the claimed magnetic nanocomposite composition encompassed by claim 1 are described in Maruno

sufficiently to have placed a person of ordinary skill in the art in possession of this composition, thus anticipating claim 1 under § 102(b). *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990). Indeed, as seen from Maruno Example 1 and complexes No. 2 through 7 of Maruno Table 2, Maruno Example 2 and complexes No. 15 and 18 through 21 of Maruno Table 4, and Maruno Example 3 and Maruno Table 5, the magnetic complexes disclosed by Maruno can comprise about 44 to 62 weight percent of polysaccharide carboxyalkyl ethers in which about 25 to 42 weight percent of magnetic iron oxide particles of about 6 to 10 nm are dispersed, which compositions are recovered as a powder by freeze drying. One of ordinary skill in this art would have reasonably expected that the polysaccharide carboxyalkyl ethers and the magnetic iron oxide particles are chemical bonded, as taught by Maruno (col. 10, lines 16-19), and that at least a portion of the ferrous chloride used in the preparation of the complexes would form magnetite, that is,  $\text{Fe}_3\text{O}_4$ , as taught by Maruno (col. 4, lines 15-16). Thus, it reasonably appears that the complexes comprise at least a polysaccharide carboxyalkyl ether as “a resin” that contains “uniformly dispersed” “nanocrystalline particles of  $\text{Fe}_3\text{O}_4$ ” that are “bonded” thereto, wherein the “resin” and the “nanocrystalline particles of  $\text{Fe}_3\text{O}_4$ ” are present in certain weight percent such that the complexes are encompassed by claim 1.

Accordingly, because the chemically bound complexes of carboxyalkyl ethers of polysaccharides and magnetic iron oxide particles reasonable appear to be identical to the magnetic nanocomposite compositions of claim 1, the burden falls upon appellants to establish by effective argument and/or objective evidence that the claimed invention patentably distinguishes over this reference with respect to . *See Spada*, 911 F.2d at 708-09, 15 USPQ2d at 1657-58; *In re Best*, 562 F.2d 1252, 1254-56, 195 USPQ 430, 432-34 (CCPA 1977). We have reassessed the patentability of the claimed invention encompassed by claim 1 based on the totality of the record, including all the factual evidence of anticipation in Maruno and appellants’ arguments evidence that the reference is not anticipatory, giving due consideration to the weight of appellants’ arguments.

We have carefully considered appellants’ arguments with respect to the difference in water solubility and the affect on viscosity properties of aqueous mixtures between the polysaccharide carboxyalkyl ether containing magnetic complexes of Maruno and the “ion exchange resins of the

present invention,” and that Maruno does not “disclose nanocrystalline magnetic  $\text{Fe}_3\text{O}_4$  particles in intimate association (chemically or physically) with an ionic exchange resin matrix of the type which is well known to one of ordinary skill in the art to be water insoluble as in the present invention” (brief, pages 6-7). While appellants correctly point out that Maruno does not disclose a classic ion exchange resin, we point out that the term “a resin” in claim 1 is not limited to “ion exchange resins,” as we discussed above, and agree with the examiner that there is no limitation in claim 1 with respect to the water solubility of the “resin.” *See In re Self*, 671 F.2d 1344, 1348-49, 213 USPQ 1, 5 (CCPA 1982). As we set forth above, Maruno does disclose that the nanosized magnetic particles are chemically bound to the polysaccharide carboxyalkyl ether and would be expected to comprise in part particles of  $\text{Fe}_3\text{O}_4$ . Further, with respect to appellants’ allegations that Maruno “does not specifically disclose the nanoscale magnetic particle clusters” (brief, page 7), we find no limitation in claim 1 specifying that the nanocrystalline particles of  $\text{Fe}_3\text{O}_4$  are in the form of clusters. Thus, we are not persuaded by appellants’ arguments and evidence that the complexes of polysaccharide carboxyalkyl ethers and magnetic iron oxide particles of Maruno are not the same as the magnetic nanocomposite compositions of claim 1.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of anticipation found in Maruno with appellants’ countervailing evidence of and argument for no anticipation in fact and find that the claimed invention encompassed by appealed claims 1 through 3 and 5 through 9, 11 and 24 through 27 are anticipated as a matter of fact under 35 U.S.C. § 102(b). Therefore, we affirm this ground of rejection.

Turning now to the ground of rejection of claim 1 as being anticipated under § 102(b) or, in the alternative, as being obvious under § 103 over Chang, we agree with the examiner’s finding that this reference discloses in Chang Example 2 a sulfonated cross-linked polystyrene ion-exchange resin that contains magnetic iron oxides in the form of  $\text{Fe}_3\text{O}_4$  and  $\text{Fe}_2\text{O}_3$ , as seen from col. 3, line 60. (answer, page 6). We find that in Chang Example 2, upon initial application of a “saturated solution equimolar in  $\text{FeCl}_2$  and  $\text{FeCl}_3$ ,” which provides ferrous and ferric ions, followed by treatment with a base, the “resin particles turned dark brown . . . and were slightly magnetic” (col. 6, lines 60-68). Upon repeated

application of the ions followed by treatment with a base, the resin particles first “became much darker and more magnetic” and then “became easily attractable by a magnet” (col. 6, line 68, to col. 7, line 6). According to Chang, the magnetic oxide particles formed inside the pores of the resin are “fine-grained, non-clustered and . . . evenly distributed” (col. 3, lines 1-13). The examiner also reasons that because Chang teaches that the size of the resin particles can be “as small as 100 Angstroms” (col. 4, lines 38-47), that is, 10 nanometers, the size of the magnetic particles resident in the pores of the resin particles can be smaller than 10 nanometers. Thus, it reasonably appears that the magnetic particles formed in the pores of the resin of Chang Example 2 would include nanosized magnetite, that is,  $\text{Fe}_3\text{O}_4$ . Indeed, Chang teaches that the presence of magnetite turns the resin “deep black” (col. 6, line 20). Thus it would further reasonably appear that in Chang Example 2, the darkening of the resin upon successive applications of ions and base indicates the further formation of nanosized  $\text{Fe}_3\text{O}_4$ . It would also reasonably appear from Chang that the  $\text{Fe}_3\text{O}_4$  would be bonded to the resin at least physically if not also chemically.

We observe in this respect that in Chang Example 1, the application of ferrous and ferric ions to polystyrene microspheres was followed by removal of excess ions prior to treatment of the at least physically bonded ions with a base at which time “the beads turned black and exhibited magnetic properties” (col. 6, lines 52-57), thus indicating the presence of magnetite which from ions physically retained in the resin. A similar “black” resin was prepared in Chang Example 4. In Chang Example 5, the resin of Chang Example 4 was modified during polymerization by the presence of the complexing agent EDTA (see col. 4, lines 30-37) and treated with ions and base as in Example 4 to provide a “product with a higher magnetic content” (col. 8, lines 27-30).

Based on this evidence in Chang, it appears to us that there is reasonable basis to believe that, *prima facie*, the magnetic nanocomposite compositions of claim 1 and the magnetic particles of Chang Examples 1, 2, 4 and 5 are identical or substantially identical. Thus, the burden falls upon appellants to establish by effective argument and/or objective evidence that the claimed invention patentably distinguishes over this reference, whether the rejection is considered to be based on 35 U.S.C. § 102 or 35 U.S.C. § 103. *Spada, supra; Best, supra*. We have reassessed the patentability of the claimed



invention encompassed by claim 1 based on the totality of the record, including all the factual evidence of anticipation and obviousness in Chang and appellants' arguments and evidence that the reference does not anticipate or render obvious the claimed invention.

Appellants acknowledge that "Chang teaches magnetic particles formed by swelling porous polymer particles and impregnating the particles with an aqueous solution of metal salt ion(s) which on the addition of a basic reagent, the salts are converted to crystals of magnetite which are uniformly distributed throughout the pores of the polymer particle" (brief, page 7). However, appellants submit that the "product in Chang is not, it is believed, a nanoscopic  $\text{Fe}_3\text{O}_4$  species as in the present invention, primarily based on color and particle size considerations and since" the process disclosed in appellants' specification which utilizes an " $\text{Fe}_m\text{S}_n$  intermediate" (see appealed claim 20) and "anaerobic conditions, was not used by Chang," and thus that the "product obtained by Chang is believed to be substantially or exclusively  $\text{Fe}_2\text{O}_3$ " (brief, page 8). Appellants further contend that Chang discloses resins that are water soluble, encapsulate the magnetic iron oxide particles in the pores of the resin and use metal complexing agents to enhance the rate of metal binding, and thus does not disclose the "formation of nanocomposite compositions with nanocrystalline  $\text{Fe}_3\text{O}_4$  particles which are intimately chemically associated" with "an ion exchange resin of very low water solubility" (*id.*). Thus, appellants conclude that Chang does not anticipate claim 1 under § 102(b), because the reference does not "disclose nanocrystalline magnetic  $\text{Fe}_3\text{O}_4$  particles in intimate association (chemically or physically) with a water insoluble ion exchange resin matrix," and does not render the claimed invention obvious under § 103 because the reference does not teach or suggest the modifications necessary to arrive at the claimed invention. (brief, pages 8-9).

We have carefully considered appellants' arguments. We find that appellants do not express any basis for their allegation with respect to the size of the magnetic iron oxide particles but rely on Ziolo '866<sup>5</sup> with respect to the alleged formation of  $\text{Fe}_2\text{O}_3$  in Chang. Considering first the matter of the

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<sup>5</sup> We have not considered the "Science, Vol 257" article that appellants cite at page 8 of their brief because this document is not of record and it does not appear that the same was attached to the brief or other submission.

magnetic iron oxide particles formed in Chang Example 2, while a “dark brown” color may well characterize the presence of  $\text{Fe}_2\text{O}_3$  as appellants contend, the further treatment of the magnetic iron oxide impregnated resin in the reference Example with two additional ion/base applications resulted in a magnetic resin particles that are much darker in color and more magnetic as we discussed above. Chang does disclose that the presence of magnetite does impart a “black” color to the resin. Indeed, we find that a mixture of magnetic iron oxides would reasonably be present in the resin because of the ferrous and ferric ions employed and Chang’s teachings that the “preferred magnetic materials are magnetic iron oxide of the formula  $\text{Fe}_3\text{O}_4$  and  $\text{Fe}_2\text{O}_3$ ” (col. 3, lines 59-60). As pointed out by the examiner (answer, page 7), and as we discussed above, the apparent presence of at least some  $\text{Fe}_3\text{O}_4$  would satisfy the claim limitation with respect to weight percent because only “0.001 . . . weight percent of nanocrystalline particles of  $\text{Fe}_3\text{O}_4$ ” is required. The magnetic particles of Chang Example 2 would thus fall within claim 1 which contains no limitation with respect to the size of the “nanocrystalline particles of  $\text{Fe}_3\text{O}_4$ .”

With respect to appellants’ notion that the disclosed process utilizing an “ $\text{Fe}_m\text{S}_n$  intermediate” is necessary to prepare the claimed magnetic nanocomposite compositions, we find no disclosure in appellants’ specification that this is so, and, as the examiner points out, there must be process limitations in claim 1 directed to this process if the process is to contribute to the definition of the product claimed therein. *See generally, In re Bridgeford*, 357 F.2d 679, 681-83, 149 USPQ 55, 57-58 (CCPA 1966). Furthermore, appellants’ arguments with respect to the various porous polymeric materials taught in Chang do not patentably distinguish claim 1 from the disclosure of the reference. We again observe that the resin in Chang Example 2 is an ion exchange resin while in Chang Example 5, HEMA was polymerized in the presence of the complexing agent EDTA. Thus, both of these porous polymeric particles would reasonably be expected to bond with the magnetic iron oxide either chemically or physically. Indeed, both of these porous polymeric particles would be “a resin” with respect to claim 1. Thus, appellants’ arguments and evidence fail to convincingly demonstrate that the magnetic nanocomposite compositions of claim 1 and the magnetic particles of Chang Examples 1, 2, 4 and 5 are not identical or substantially identical.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of anticipation and of obviousness found in Chang with appellants' countervailing evidence of and argument for no anticipation in fact and nonobviousness and reach the finding and conclusion that the claimed invention encompassed by appealed claims 1 through 3 and 5 through 9, 11 and 24 through 27 are anticipated as a matter of fact under § 102(b) and would have been obvious as a matter of law under § 103. Therefore, we affirm this ground of rejection.

Finally, we consider the ground of rejection of claim 1 under § 103 as being unpatentable over the combined teachings of Chang and Ziolo '756. The examiner contends that one of ordinary skill in the art would have been motivated to modify Chang by employing other known ion exchange resins in place of those disclosed in Chang and to utilize the art recognized nanocrystalline  $\text{Fe}_3\text{O}_4$  as suggested by Ziolo '756 in the reasonable expectation of obtaining magnetic particles. *See generally, In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). As evidence of nonobviousness, appellants submit that "the nanocomposite compositions of the present invention were not, or could not be, obtained without the use of the alkali metal sulfide salt as described [in specification] Comparative Example 1 on page 19, . . . wherein there is disclosed a control experiment which produced a product which was believed to be identical to the  $\text{Fe}_2\text{O}_3$  product prepared by Ziolo '866" (brief, pages 9-10). On this basis, appellants allege that "the compositions of the present invention . . . could not be obtained by following the teachings of Chang or Ziolo '756" and that the "use of the alkali metal sulfide was shown to be critical, and unexpectedly" resulted in the claimed compositions.

We have carefully considered specification Comparative Example 1 and find no evidence therein which would reasonably support appellants' contention that the claimed compositions cannot be obtained by the process disclosed in Chang. Furthermore, as we pointed out above, we have found no disclosure in appellants' specification which establishes that the disclosed process utilizing an " $\text{Fe}_m\text{S}_n$  intermediate" is necessary to prepare the claimed magnetic nanocomposite compositions. Accordingly, appellants' arguments are entitled to little if any weight.

Accordingly, based on our consideration of the totality of the record before us, we have weighed

the evidence of obviousness found in the combined teachings of Chang and Ziolo '756 with appellants' countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 1 through 9, 11 and 24 through 27 would have been obvious as a matter of law under 35 U.S.C. § 103. *See generally, In re Johnson*, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

In summary, we have affirmed the ground of rejection of claim 4 under § 112, first paragraph, written description requirement; the ground of rejection of claims 1 through 3 and 5 through 9, 11 and 24 through 27 under 35 U.S.C. § 102(b) as being anticipated by Maruno; the ground of rejection of claims 1 through 9, 11 and 24 through 27 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Chang ; and the ground of rejection of claims 1 through 9, 11 and 24 through 27 under 35 U.S.C. § 103 as being unpatentable over Chang in view of Ziolo '756. We have reversed the ground of rejection of claims 1 through 3, 5 through 9, 11, 20 through 22 and 24 through 27 under 35 U.S.C. § 112, first paragraph, written description requirement; and the ground of rejection of claim 4 under 35 U.S.C. § 112, second paragraph.

The examiner's decision is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

*AFFIRMED-IN-PART*

EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
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	)	
JOHN D. SMITH	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES

Appeal No. 1996-3980  
Application 08/290,125

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